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EXAMINER

ESTRADA, MICHELLE

ART UNIT	PAPER NUMBER
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2823

NOTIFICATION DATE	DELIVERY MODE
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08/04/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

DETAILED ACTION

Applicant's request for evidence of the official notice matter taken by the Examiner on the final the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al. (5,879,970) in view of Joo et al. (2003/0045075).

3. Shiota et al. discloses depositing an epitaxial layer based on Group IV elements a silicon substrate by Chemical Vapor Deposition using source gases (See abstract), and including employing nitrogen as a carrier gas, wherein the epitaxial layer comprises a SiGe epitaxial layer (Abstract and Col.6, lines 15-20). Shiota discloses wherein the method is carried out at a temperature between 350 °C and 450 °C.

4. Shiota does not specifically disclose wherein the method is carried out at a temperature between 500 °C and 600 °C. However, the recited range and the one disclosed by Shiota is close enough to be considered routine optimization.

5. One of ordinary skill in the art would have been to the recited temperature through routine experimentation to achieve a desired rate of deposition.

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In addition, the selection of temperature, it's obvious because it is a matter of determining optimum process conditions by routine experimentation with a limited number of species of result effective variables. These claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996)(claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill or art) and In re Aller, 105 USPQ 233 (CCPA 1995) (selection of optimum ranges within prior art general conditions is obvious).

Note that the specification contains no disclosure of either the critical nature of the claimed temperature or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen temperature or upon another variable recited in a claim, the Applicant must show that the chosen temperature are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Re claim 18, Shiota et al. does not disclose wherein the source gases include SiH_4 and GeH_4 .

Joo et al. disclose that is a conventional growth technique to grow and epitaxial silicon germanium layer by simultaneously supplying source gases that include SiH_4 and GeH_4 ([0006]).

It would have been within the scope of one of ordinary skill in the art to combine the teachings of Shiota et al. and Joo et al. to enable the epitaxial growing step of Shiota et al. to be performed according to the teachings of Joo et al. because one of ordinary skill in the art would have been motivated to look to alternative suitable methods of performing the disclosed epitaxial growing step of Shiota et al. and art recognized suitability for an intended purpose has been recognized to be motivation to combine. See MPEP 2144.07.

Allowable Subject Matter

6. Claims 5, 7, 19, 21 and 22 are allowed.

Response to Arguments

Applicant argues that Shiota teaches that the use of a temperature between 350 °C and 450 °C is critical to the formation of the desired polycrystalline silicon-germanium alloy. However, given the temperature range in Shiota, one of ordinary skill in the art would have use routine optimization to grow a desired epitaxial SiGe layer with the desired structure and characteristics necessary to operate the final device.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is 571-272-1858. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michelle Estrada/
Primary Examiner, Art Unit 2823

ME
July 30, 2008